MDS-S1

SONY
SERVICE MANUAL

AEP Model
UK Model
Singapore Model
Tourist Model

SUPPLEMENT-2

File this supplement with the service manual.

Subject : 1. SERVICE NOTE
2. BD Board change
3. Chenge of the adjustment specification.

(ECN-CD501076)

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1. SERVICE NOTE

• Note for replacement of IC121 and IC171 on the BD board

IC121 on the BD board of this unit has modified from CXD2535AR to CXD2535BR due to an improvement.
Some contents of nonvolatile memory in the IC171 are modified according to this modification. When replacing IC171, the previous contents for IC121 (CXD2535AR) are written as an initialized value from the system control IC. (When replacing IC171, turn the power on once to write an initialized value.)
In case the IC171 on the BD board is replaced, which uses CXD2535BR to IC121, see the following procedure to rewrite the contents of nonvolatile memory. As for replacement of IC121, use CXD2535BR to rewrite the contents of IC171.

Table Comparison between CXD2535AR and CXD2535BR regarding the contents of nonvolatile memory

ADDRESS	CXD2535AR	CXD2535BR
15	90	93
2D	33	1A
2E	33	1A

How to rewrite the nonvolatile memory

① Plug in the power plug to an outlet pressing the AMS knob, and release the AMS knob.
② Turn the AMS knob to be displayed "EEP MODE".
If the YES button is pressed, the display will be changed to "EEP ** @@".
(** : Address, @@ : data)
③ Turn the AMS knob to be displayed "EEP 15 @@".
④ If the AMS knob is pressed, "EEP 15 @@ > @@" will be displayed. So turn the AMS knob to be displayed "EEP 15 @@ > 93".
⑤ Pressing the YES button, "Complete!" is displayed once, "EEP 15 93" is displayed, and the data is rewritten.
⑥ As for the address 2D and 2E, rewrite each of them to "1A" following the steps ③ to ⑤ as well.
⑦ After the all modification are complete, press the NO button to be displayed "EEP MODE".
⑧ Press the REPEAT button. In case a disc is unloaded, the display "STANDBY" will be go on and off, then unplug the power plug. In case a disc is loaded, "STANDBY" is displayed once and the disc is ejected. After that, unplug the power plug from an outlet to be out from the EEP rewriting mode. (Refer to **[How to stop test mode]** as below.)

Note : The modification in the contents of nonvolatile memory is not reflected if the power is not turned off once.

[How to stop test mode]

In the previous mentioned text regarding test mode, "to release test mode" is that should be unplug the power plug from an outlet. If the test mode is released in this way, an incorrect operation will rarely occur to the set. So release the test mode according to the followings.

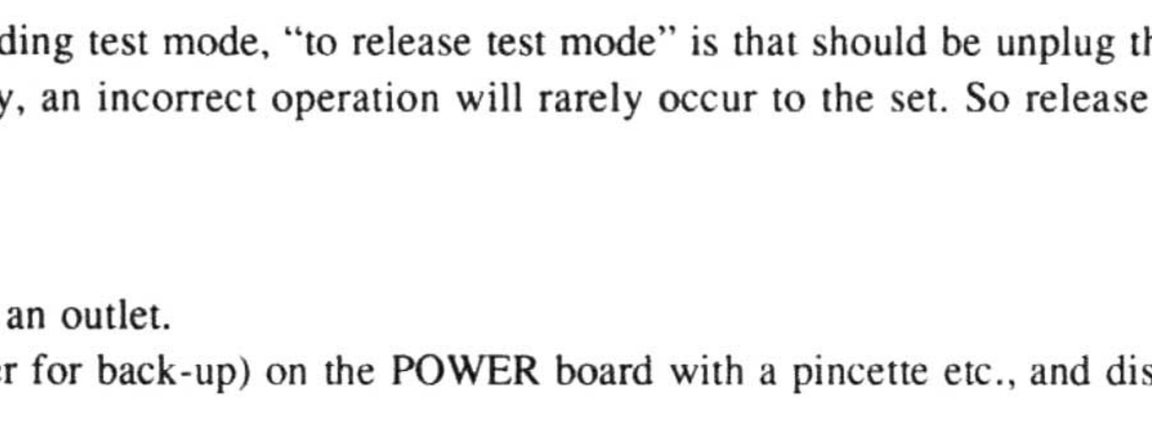
- **Method 1**
  (1) Unplug the power plug from an outlet.
  (2) Short-circuit C532 (condenser for back-up) on the POWER board with a pincette etc., and discharge it.

- **Method 2**
  (1) Press the [REPEAT] button.
  (2) In case a disc is unloaded, the display "STANDBY" will go on and off.
  In case a disc is loaded, the "STANDBY" is displayed once and the disc is ejected.
  (3) Unplug the power plug from an outlet.

- To stop test mode will be different according to a model name of IC201 on the DIGITAL board. Refer to the following "How to discriminate".

How to discriminate

DIGITAL board IC201



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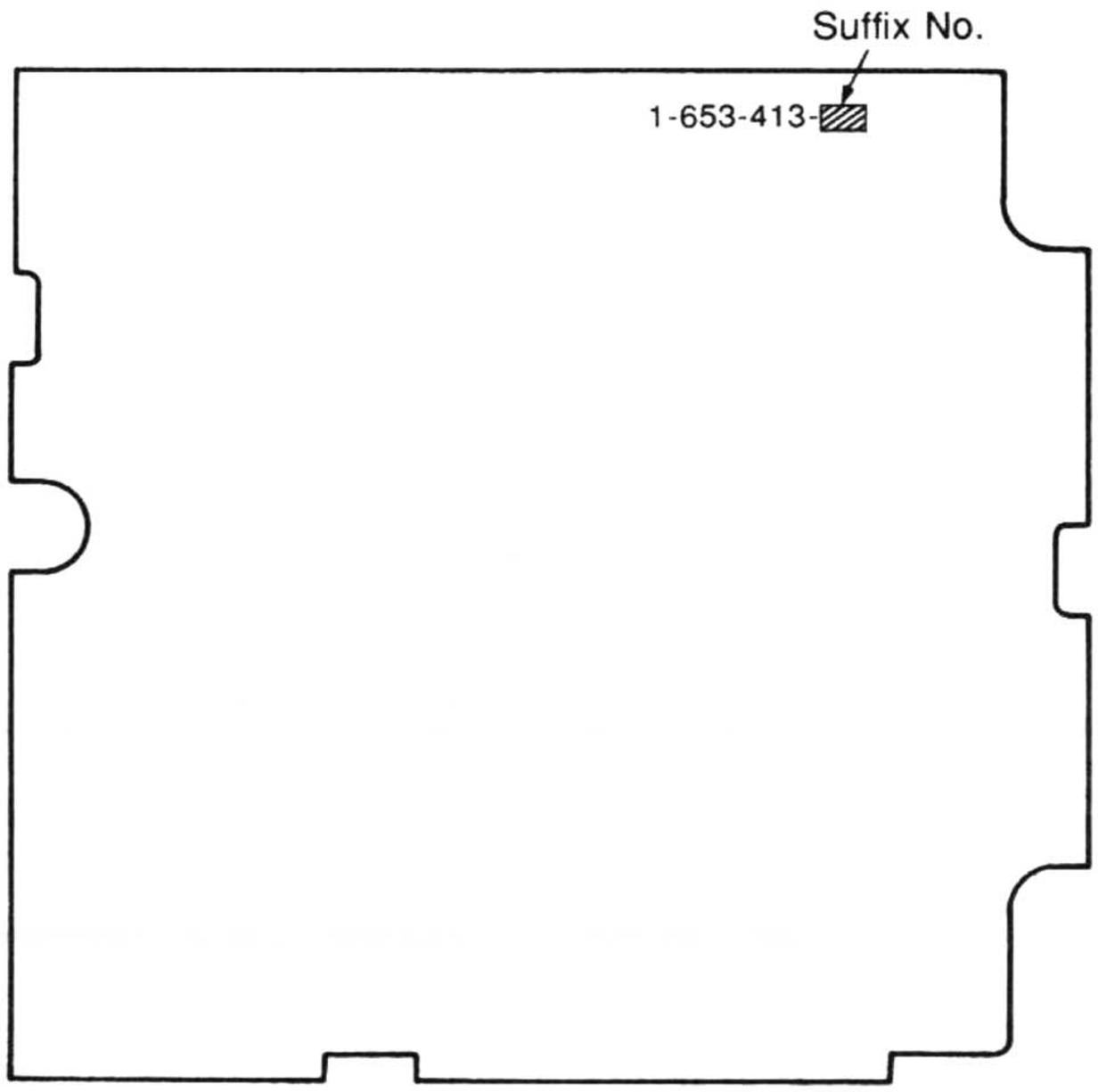
2. BD Board change

NOTE: Many charge of mounting parts are different between boards which have a suffix No. -[15] or later and which have a suffix No. -[14] or before. Refer to this supplement-3 for boards which have a suffix No. -[15] or later. As for boards which have a suffix No. -[14] or before, refer to the previous issued manual (9-959-839-01).

• Part No. Location — BD board — (Component side)



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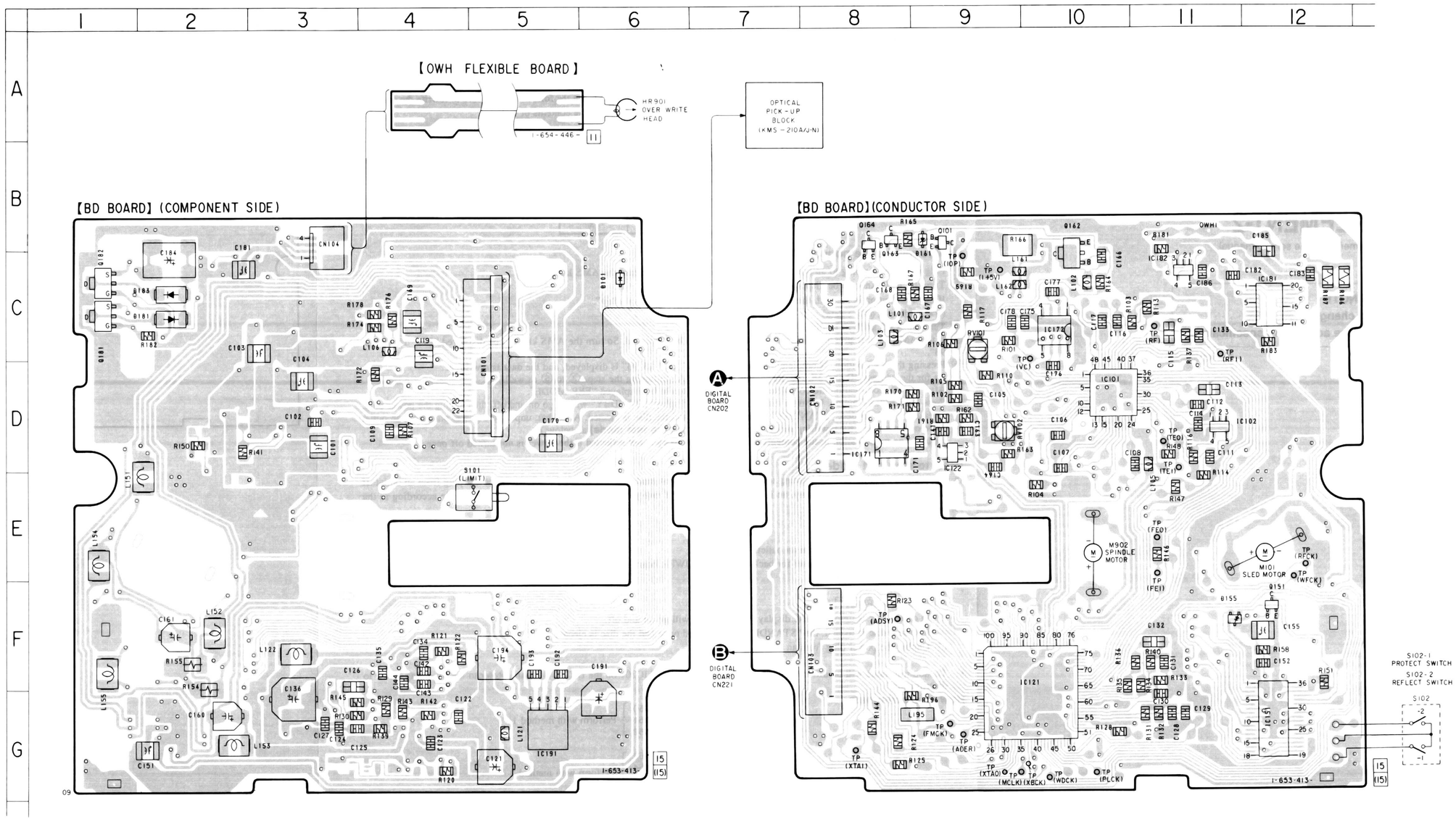
PRINTED WIRING BOARD — RF SECTION —

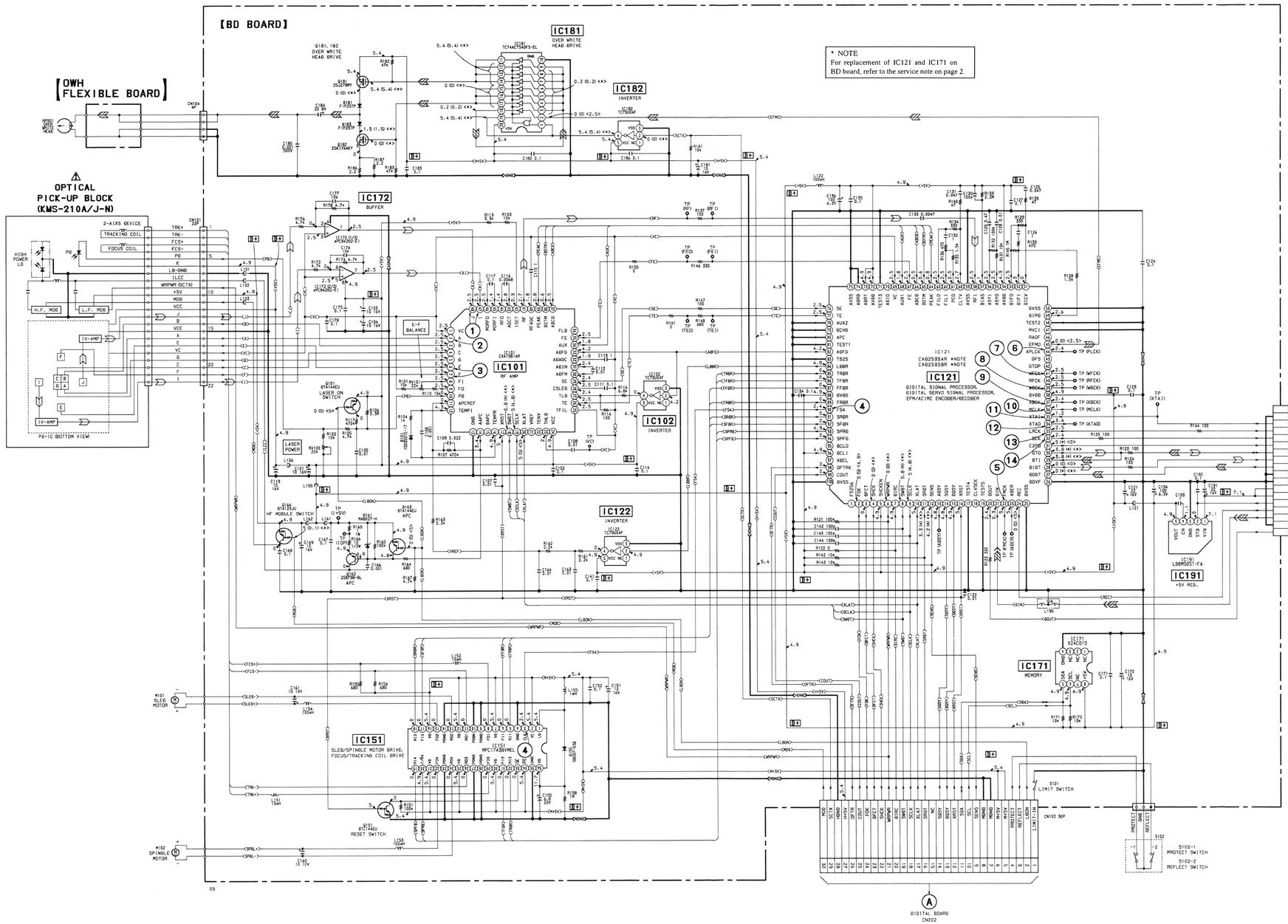
- **Semiconductor Location**

Ref. No.	Location
D101	C-6
D155	F-11
D161	B-8
D181	C-2
D183	C-2
IC101	D-10
IC102	D-11
IC121	F-9
IC122	D-9
IC151	G-12
IC171	D-8
IC172	C-10
IC181	C-12
IC182	C-11
IC191	G-5
Q101	B-9
Q151	F-12
Q162	B-10
Q163	B-8
Q164	B-8
Q181	C-1
Q182	C-1

Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒▒ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)





• Waveforms

① IC101 (47)(48) (I, J) APPROX. 0.35Vp-p (PLAY mode)	⑧ 11μsec 5.2Vp-p IC121 (59) (WDCK)
② IC101 (2) (A) APPROX. 0.18Vp-p (PLAY mode)	⑨ 0.36μsec 5.2Vp-p IC121 (37) (XBCK)
③ IC101 (6)(7) (E, F) APPROX. 0.08Vp-p (PLAY mode)	⑩ 46nsec 3.4Vp-p IC121 (36) (MCLK)
④ 5.8μsec 5.2Vp-p IC121 (56)(FS4), IC151 (3)(CLK)	⑪ 46nsec 4Vp-p IC121 (35) (XTAI)
⑤ 0.16msec 5.2Vp-p IC121 (22) (FMCK)	⑫ 46nsec 3.1Vp-p IC121 (34) (XTAO)
⑥ 0.23μsec 5.2Vp-p IC121 (44) (XPLCK)	⑬ 23μsec 5.2Vp-p IC121 (53) (LRCK)
⑦ 135μsec 5.2Vp-p IC121 (41) WFCK	⑭ 0.36μsec 5.2Vp-p IC121 (52) (BCK)

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ): PLAY
  < >: REC
  * : can not be measured.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▷ : PB
  ▷▷ : REC
  ▷▷▷ : REC (Digital in)

ELECTRICAL PARTS LIST

BD

NOTE:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB...,
  uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

* NOTE
For replacement of IC121 and IC171 on BD board, refer to the service note on page 2.

Ref.No.	Part No.	Description			Remark
*	A-4673-174-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C104	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C107	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C116	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C117	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C119	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C121	1-126-395-11	ELECT	22uF	20%	16V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C125	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C126	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C128	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C131	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C132	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C151	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C155	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C160	1-104-601-11	ELECT CHIP	10uF	20%	10V
C161	1-104-601-11	ELECT CHIP	10uF	20%	10V
C163	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C164	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C166	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C168	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C169	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C170	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C176	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C177	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C178	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C181	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C182	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C184	1-107-836-11	ELECT CHIP	22uF	20%	8V
C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C186	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C191	1-126-395-11	ELECT	22uF	20%	16V
C192	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C193	1-164-346-11	CERAMIC CHIP	1uF		16V
C194	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
		< CONNECTOR >			
CN101	1-766-508-11	CONNECTOR, FFC/FPC (ZIF) 22P			
CN102	1-766-510-21	CONNECTOR, FFC/FPC 30P			
CN103	1-766-509-21	CONNECTOR, FFC/FPC 18P			
CN104	1-766-898-21	HOUSING, CONNECTOR(PC BOARD)4P			
		< DIODE >			
D101	8-719-988-62	DIODE	1SS355		
D155	8-719-031-17	DIODE	1SS322-TE85L		
D161	8-719-421-15	DIODE	MA8027-L		
D181	8-719-033-60	DIODE	F1P2STP		
D183	8-719-033-60	DIODE	F1P2STP		
		< IC >			
IC101	8-752-072-68	IC	CXA1981AR		
IC102	8-759-243-19	IC	TC7SU04F		
IC121	8-752-375-06	IC	CXD2535AR * NOTE		

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BD

Ref.No.	Part No.	Description	Remark
IC121	8-752-375-36	IC CXD2535BR * NOTE	
IC122	8-759-243-19	IC TC7SU04F	
IC151	8-759-179-60	IC MPC17A38VMEL	
IC171	8-759-504-12	IC X24C01S * NOTE	
IC172	8-759-149-73	IC uPC842G2	
IC181	8-759-095-65	IC TC74ACT540FS	
IC182	8-759-243-19	IC TC7SU04F	
IC191	8-759-822-99	IC L88MS05T-FA	
		< COIL >	
L101	1-414-234-11	INDUCTOR, FERRITE BEAD	
L102	1-414-234-11	INDUCTOR, FERRITE BEAD	
L103	1-414-234-11	INDUCTOR, FERRITE BEAD	
L105	1-414-234-11	INDUCTOR, FERRITE BEAD	
L106	1-414-234-11	INDUCTOR, FERRITE BEAD	
L121	1-414-234-11	INDUCTOR, FERRITE BEAD	
L122	1-412-039-51	INDUCTOR CHIP 100uH	
L151	1-412-622-51	INDUCTOR 10uH	
L152	1-412-622-51	INDUCTOR 10uH	
L153	1-412-039-51	INDUCTOR CHIP 100uH	
L154	1-412-039-51	INDUCTOR CHIP 100uH	
L155	1-410-980-51	INDUCTOR CHIP 1mH	
L161	1-414-234-11	INDUCTOR, FERRITE BEAD	
L162	1-414-234-11	INDUCTOR, FERRITE BEAD	
L195	1-233-316-21	FILTER, CHIP EMI	
		< TRANSISTOR >	
Q101	8-729-905-12	TRANSISTOR DTA144EU	
Q151	8-729-905-18	TRANSISTOR DTC144EU	
Q162	8-729-101-07	TRANSISTOR 2SB798-DL	
Q163	8-729-905-12	TRANSISTOR DTA144EU	
Q164	8-729-924-19	TRANSISTOR DTA123JU	
Q181	8-729-018-75	TRANSISTOR 2SJ278MY	
Q182	8-729-017-65	TRANSISTOR 2SK1764KY	
		< RESISTOR >	
R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R103	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R104	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R105	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R106	1-216-133-00	METAL CHIP 3.3M 5% 1/10W	
R107	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R110	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R113	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R114	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R116	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R117	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R120	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R121	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R122	1-216-295-91	CONDUCTOR, CHIP (2012)	
R123	1-216-037-00	METAL CHIP 330 5% 1/10W	
R124	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R125	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R128	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R129	1-216-037-00	METAL CHIP 330 5% 1/10W	
R130	1-216-041-00	METAL CHIP 470 5% 1/10W	
R131	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R132	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R133	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R134	1-216-037-00	METAL CHIP 330 5% 1/10W	
R135	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R136	1-216-041-00	METAL CHIP 470 5% 1/10W	
R137	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R139	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R140	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R141	1-216-295-91	CONDUCTOR, CHIP (2012)	
R142	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R143	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R144	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R145	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R146	1-216-037-00	METAL CHIP 330 5% 1/10W	
R147	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R148	1-216-045-00	METAL CHIP 680 5% 1/10W	
R150	1-216-295-91	CONDUCTOR, CHIP (2012)	
R151	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R154	1-220-262-11	METAL GLAZE 680 5% 1/4W	
R155	1-220-262-11	METAL GLAZE 680 5% 1/4W	
R158	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R161	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R162	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R163	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R164	1-216-045-00	METAL CHIP 680 5% 1/10W	
R165	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R166	1-220-250-11	METAL GLAZE 10 5% 1/2W	
R167	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R169	1-219-724-11	METAL CHIP 1 1% 1/4W	
R170	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R171	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R172	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R174	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R176	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R178	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R181	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R182	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R183	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R186	1-216-134-00	METAL CHIP 2.2 5% 1/8W	
R187	1-216-134-00	METAL CHIP 2.2 5% 1/8W	

* NOTE
For replacement of IC121 and IC171 on BD board, refer to the service note on page 2.

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Ref.No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K	
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K	
		< SWITCH >	
S101	1-572-467-31	SWITCH, PUSH (1 KEY)(LIMIT)	

****

Ref.No.	Part No.	Description	Remark

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3. Change of the adjustment specifications.

The specification of the previous issued **"Supplement-1 ELECTRICAL ADJUSTMENT"** has been changed as below.

2-5. Temperature Compensation Offset Adjustment

Page	FORMER	NEW
6	**Specifications :** The Temperature should be within "TEMP = E0" and "TEMP = 1F".	**Specifications :** The "TEMP = ☐" should be within "E0 – EF", "F0 - FF", "00 - 0F", "10 - 1F" and "20 - 2F".

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